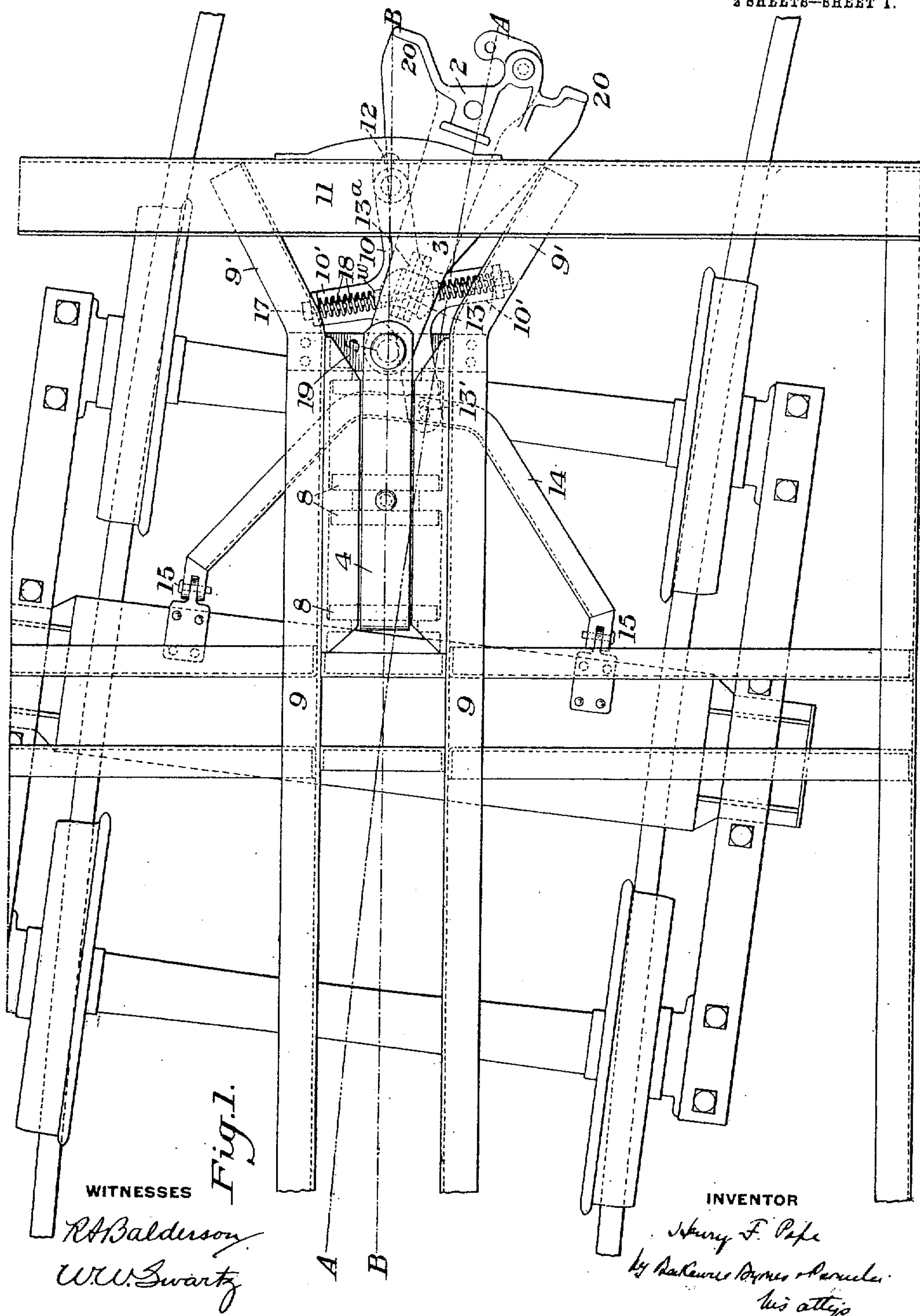


969,562.

H. F. POPE.
DRAFT GEAR.
APPLICATION FILED MAR. 11, 1908.

Patented Sept. 6, 1910.

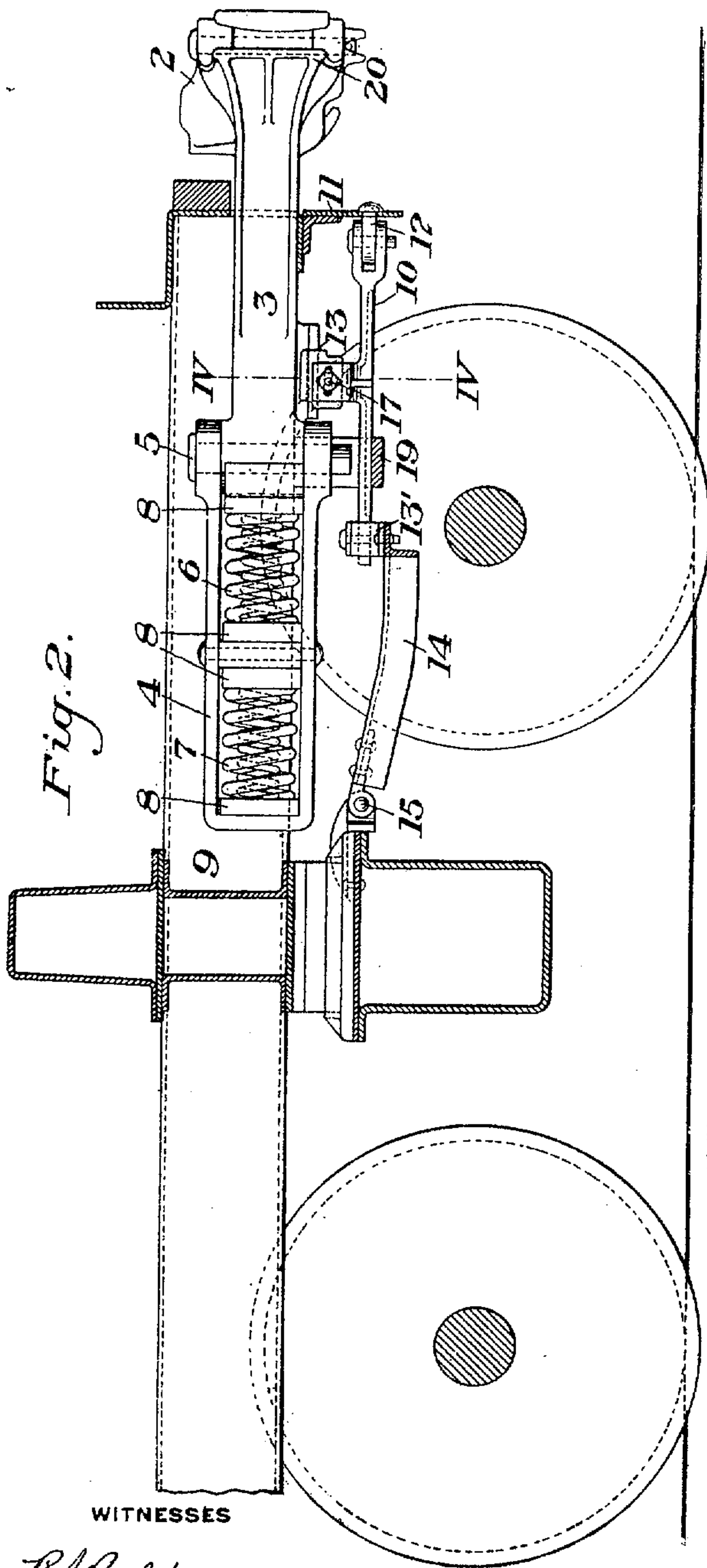
2 SHEETS—SHEET 1.



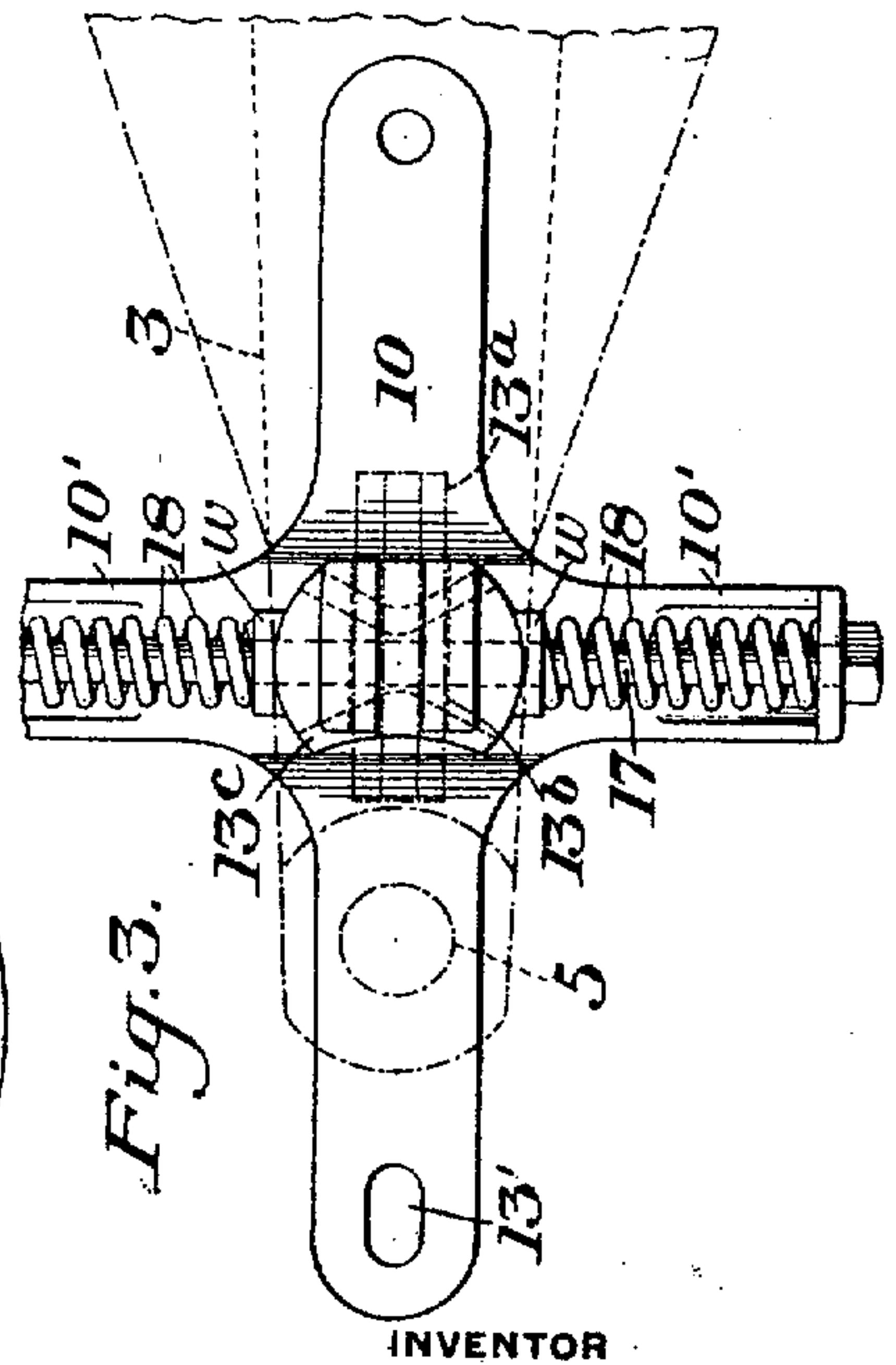
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2 SHEETS—SHEET 2.

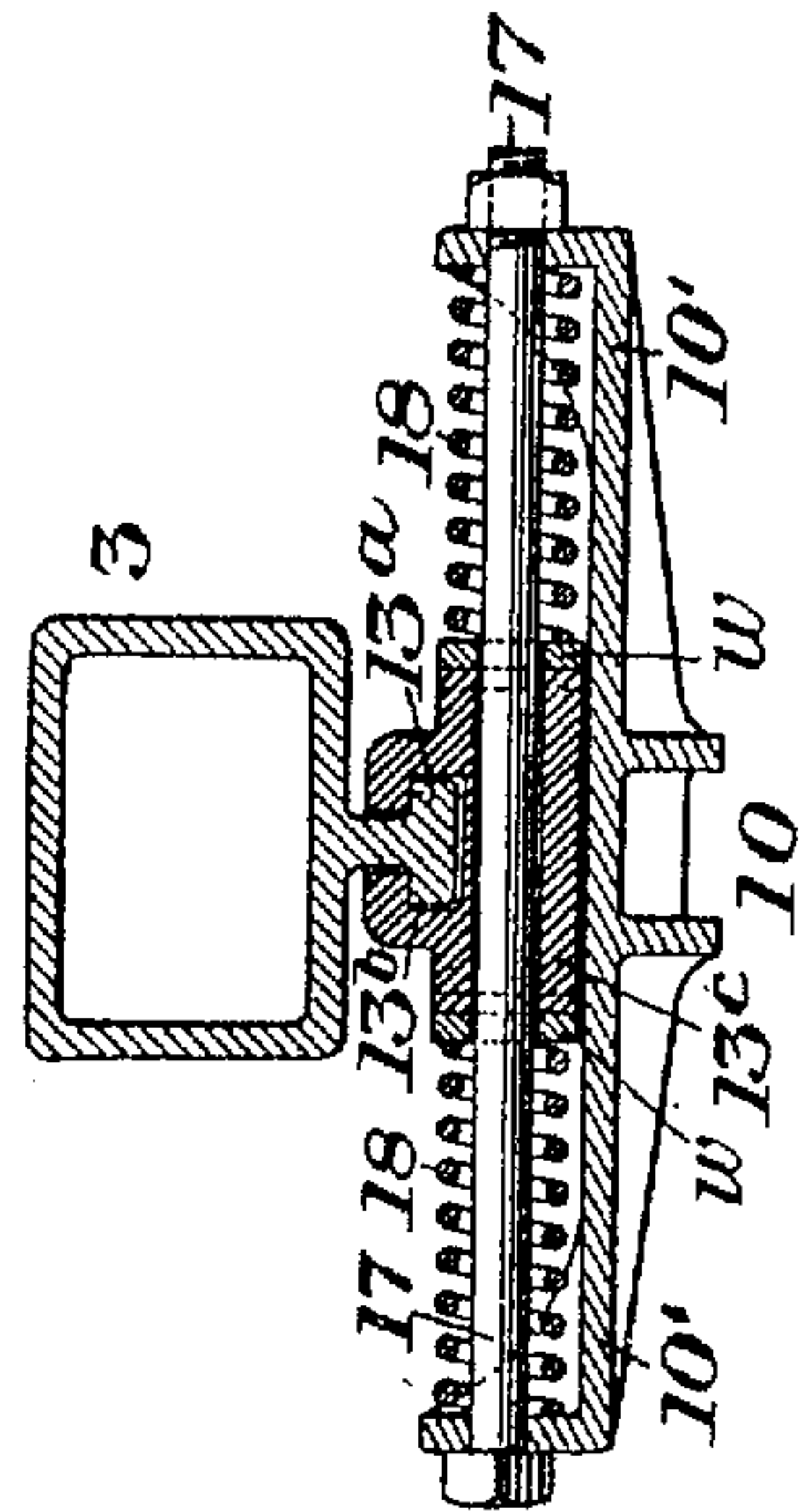


R. A. Balderson
W. W. Swartz



Henry F. Pope
by William H. Pope
his atty

Fig. 4.



UNITED STATES PATENT OFFICE.

HENRY F. POPE, OF CLEVELAND, OHIO, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

DRAFT-GEAR.

969,562.

Specification of Letters Patent.

Patented Sept. 6, 1910.

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To all whom it may concern:

Be it known that I, HENRY F. POPE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Draft-Gears, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view, partly diagrammatic, showing my draft rigging applied to a railway car and showing a preferred form of its embodiment; Fig. 2 is a side view of the same, partly in section; Fig. 3 is a plan view of the intermediate lever; and Fig. 4 is a cross section on the line IV—IV of Fig. 2.

My invention has relation to an improvement in radial draft gears for railway cars; that is, to a draft gear which is mounted on the car frame to swing in a horizontal plane and thus adapt itself to the motion of the car as it travels around the curves of the track, being guided by a connection with the car truck.

My present invention is designed to provide means of a novel and effective character, in a draft gear of this type, whereby the couplers will be so guided that the heads of the couplers will be constantly at about the center of the track, both on straight tracks and on curves. This result I effect by an intermediate connection between the radially swinging draft member and the truck, of such character that the motion transmitted to the swinging draft member from the truck will be less than would be transmitted to it by a direct connection with the truck, the centers of movements being so related to each other that the coupler heads will be constantly guided to the center of the track. This enables the use of a relatively short coupler shank. The automatic guiding of the heads to the center of the track, enables the heads to meet and couple under all conditions.

Referring to the drawings, in which I have shown one embodiment of my invention, the numeral 2 designates the coupler head, whose shank 3 is pivoted to the yoke 4 of the draft rigging at 5. This draft rigging may be of any desired character. I have shown it as having springs 6 and 7 seated in the yoke between heads or followers 8. The draft rigging and yoke are

mounted between the center sills, or draft timbers 9, in the usual manner, being held thereby from lateral movement, and the sills or draft timbers are spread at their forward ends between the bolster and the end sill, as shown at 9', to permit the necessary lateral swinging movement of the coupler and its shank.

In order to guide the coupler automatically so that the inner face of the nose of the coupler knuckle will be guided to the center of the track, I employ an intermediate connecting lever 10, which is pivotally connected at its forward end to the end sill 11 of the car at the point 12, to the coupler shank at 13, and at its rear end at 13' to a bail-shaped piece 14 whose rear ends are pivotally connected to the truck frame at 15. These pivotal connections 15 permit vertical movement of the piece 14, but the latter is rigid with respect to lateral movement, being conveniently made of a rigid piece of angle iron. The lever 10 has oppositely extending lateral arms 10' which support a guiding pin or bolt 17 for springs 18 whose inner ends act against opposite sides of the coupler shank, through washers *w* seated on opposite curved sides of the block 13^c described below. These springs afford the necessary lateral freedom for the coupler when it is forced out of its normal position, while they ordinarily guide the coupler without compression. By placing the springs on the lever, they can be made relatively short and small without reducing their effectiveness. 19 is a depending guiding support for the lever 10.

The pivotal or loose connection at 13 may be formed in various ways. In the drawings, I have shown the coupler shank as having a depending T-shaped projection 13^a which engages a longitudinal slot 13^b in a block 13^c which is seated in the central portion of the lever 10 and through which the bolt 17 passes, the opening for said bolt therein being enlarged toward each end, as shown in Fig. 3 to permit the lever 10 and the bolt 17 to assume different angular positions with respect to the longitudinal axis of the coupler shank.

In Fig. 1 the broken line A—A designates the center line of the track curve, and the line B—B, the center line of the car body. When the truck turns on a curve, the pivotal connection at 13' carries that end of the lever

10 to one side, and by reason of the fact that its opposite end is held by its connection with the end sill of the car, the connection to the coupler shank at the point 13 causes the coupler shank to also move laterally, but to a less extent than the point 13'. The motion transmitted to the coupler by the truck is therefore reduced, and the coupler is guided to the center line A—A as shown. In laying out the device, with the coupler knuckle placed at the center of the track, and the pivotal point of the coupler fixed by the length of its shank, the point of connection of the intermediate lever 10 can be so fixed as to insure the proper guiding of the coupler. The pivotal point of the coupler may, of course, be changed, but in any case, the locations of the other centers may be readily determined to effect the desired result.

The coupler is shown as having the side-stops 20 in order to permit one car to push another and also to assist in making a coupling if two adjacent couplers do not meet in alinement.

The advantages of my invention in assuring certainty of action of the draft gear to enable it to couple under all conditions, will be appreciated by those skilled in the art.

It will, of course, be understood that, within the principles of my invention, the apparatus may be modified in various ways. Thus, any suitable form of draft gear may be employed; different forms of the intermediate lever may be employed; the form of connection between the lever and the truck may also be changed, and instead of a simple coupler shank, any suitable carrier may be employed for the coupler head, since

What I claim is:—

1. A radially swinging draft member, a coupler head, and a connection between the draft member and the truck arranged to impart to the draft member a less movement than would be transmitted to it by direct connection with the truck and thereby direct the coupler head substantially to the center of the track, substantially as described.

2. A radially swinging draft member, a coupler head, and a lever connected at one end to the car and at its opposite end to the car truck, with an intermediate connection with the draft member, said lever acting to reduce the lateral movement transmitted to the draft member by the truck and thereby direct the coupler head substantially to

the center of the track, substantially as described.

3. A radially swinging draft member, a coupler head, a lever connected at one end to the car, and at its intermediate portion to the draft member, a connection between the opposite end of the lever and the truck, and springs carried by said lever and acting upon opposite sides of the draft member, the parts being arranged to direct the coupler head to substantially the center of the track, substantially as described.

4. A radially swinging draft member, a coupler head, and a motion-reducing connection between the draft member and the car truck, said motion-reducing connection including springs acting upon opposite sides of the draft member, the parts being arranged to direct the coupler head to substantially the center of the track, substantially as described.

5. A radially swinging draft member, a coupler head, a lever having a plurality of arms, one arm having a pivotal connection with the draft member, and another arm having a pivotal connection with the car, and a member connected to the truck for vertical movement and to which said lever is also pivoted, the parts being arranged to direct the coupler head to substantially the center of the track, substantially as described.

6. A radially swinging draft member, a coupler head, a motion-reducing lever having a point of connection with the draft member and also with the car, and a member connected to the car truck and also to the lever, said member being rigid with respect to relative lateral movement, the parts being arranged to direct the coupler head to substantially the center of the track, substantially as described.

7. In a radial draft gear, a coupler head, a radially swinging draft member having a guiding connection with the truck, and a lever and springs interposed between the swinging draft member and the guiding connection and arranged to reduce the lateral movement from the truck and direct the coupler head to substantially the center of the track, substantially as described.

In testimony whereof, I have hereunto set my hand.

HENRY F. POPE.

Witnesses:

ERNEST H. SCHMIDT,
HARRY E. ORR.